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ABSTRACT

Data for this study were collected by observing 60 secondary school English classes over a four-month period. The principals of six schools chose 15 of their most effective teachers to be observed. Four questions were addressed: (1) How do teachers and students spend classroom time together?; (2) What instructional processes are used most often?; (3) How much time do these processes require?; and (4) Which instructional processes enable teachers and students to attain educational objectives within the available classroom time? Analysis of the descriptive time narrative logs showed that allocated classroom time and instructional behavior varied among the teachers, although most of the time and behaviors were directed toward explaining a process, addressing questions to a class, repeating student responses, and giving students directions. The conclusions drawn from the study support previous research concluding that teachers who are task oriented and who plan and organize instruction allot more time to academic tasks and activities and that this behavior achieves instructional goals. (FG)

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INSTRUCTIONAL BEHAVIORS THAT ENABLE TEACHERS TO MAXIMIZE ALLOCATED CLASSROOM TIME

BY

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INTRODUCTION

Research on teaching is not novel. Good, Biddle, and Brophy (1975) reported that by 1975, more than 10,000 studies had investigated the topic of teacher behaviors. It was only during the last decade, however, that more specific information about effective teaching was provided by research studies. The studies have identified and described the instructional processes that foster student achievement (Soar and Soar 1972; Tikunoff, Berliner, and Rist, 1975; Ebmeier and Good, 1978; Anderson, Brophy, and Evertson, 1979). The findings from such studies were explicit enough to distinguish between effective and ineffective teaching.

Research studies also began to explore the utilization of classroom time (Good and Grouws, 1977, 1979; Brophy and Evertson, 1978, 1979; Evertson, Anderson, and Brophy, 1978; Stallings, 1978, 1979; Berliner, 1979; Evertson and Anderson, 1979; Evertson, Emmer, and Clements, 1980). Earlier studies by Carroll (1963) and Bloom (1976) had shown evidence that the amount of time that students spent on academic learning was related to student achievement. Hunter pointed out:

> We have become acutely aware that time is the coin of teaching, 'Time' is what teacher and learner have to 'buy' learning. That time can be spent wisely, with escalating learning activities, or fritted away with no learning return on its investment. The teacher has great influence on the expenditure of time and energy because he or she can deliberately exclude or eliminate teaching and learning activities and materials that do not contribute to or complement the achievement of an intended learning.

Rosenshine (1978, p. 38) noted that research studies are beginning to focus on what students do in classroom settings. He also maintained that

this focus gives information on the proportion of student time spent in seatwork and in discussion. Allotting time to a subject does not necessarily mean increased learning if that time is not used wisely. Teachers may not have control of allocated time that is scheduled for subjects or objectives, but they do have control of learning time for students (Feldhusen, 1979; Arlin and Roth, 1978).

Once teachers receive allocated school time, classroom time becomes one of their valuable resources. Students cannot learn what they do not spend time doing (Carroll, 1963; Wiley and Harnichfeger, 1974; Corno, 1979). As Bloom (1980) advocated, teachers can use instructional time to alter learning positively or negatively. Quality instructional time enhances quantity time, and, consequently, student achievement is increased.

As Berliner (1976) has maintained, instructional time is an important variable in the learning process. The manner in which teachers and students spend that time together in the classroom is especially important for educational objectives to be attained.

STATEMENT OF THE PROBLEM

The improvement and quality of instruction continues to be a primary facet of education. The public expects schools and classrooms to strive to obtain multifarious goals within the allocated classroom time. What teachers do in the classroom can influence what students learn and how much they learn.

Over the past ten years instructional tasks have increased. Classroom teachers have the same number of tasks to perform with the same amount of classroom time that was allocated fifteen years ago. It may come as a surprise to some to be told that the schools may allow less than adequate time for learning any tasks; however, this is often the case. It is partly a consequence of the very large amount of material that the schools are expected to teach; the available time must somehow be distributed among many things (Carroll, 1963, p. 727). Teachers and administrators have not been blind to the effect of time pressures on their creativity, and they have sought new ways in organizing the school year, the school day, and activities within the day (Bostwick, 1961).

Time has become a valuable classroom resource for teachers and learners; therefore, many educational objectives have to be attained. The manner in which teachers use classroom time to accomplish the instructional tasks is important. The instructional behaviors which will increase the amount of quality time need to be addressed. Many instructional tasks, such as assessing student characteristics, planning and selecting appropriate methods, keeping students engaged in academic activities, and monitoring student

progress are specific instructional behaviors that teachers have not acquired. As a result, valuable classroom time is often lost.

If classroom time is to be used efficiently, teachers need to employ instructional behaviors that enable them to maximize the utilization of the time. These instructional behaviors that enable teachers to achieve instructional goals and objectives with learners need to be described.

PURPOSE OF THE STUDY

The purpose of the study was to identify instructional processes that maximize the utilization of available classroom time efficiently. The study focused on answering four research questions:

1. How do teachers and students spend classroom time together?
2. What instructional processes are used most often, and how much time do the instructional processes require?
3. Which instructional processes enable teachers and students to attain educational objectives within the available classroom time?

SIGNIFICANCE OF THE STUDY

There are many goals that society expects schools and educators to strive to attain. These are goals that should be attained within the regular school and classroom schedule. In a 1964 report on the Instructional Program of the Public Schools, John Goodlad asserted:

> Much school time is used...for things not directly bearing upon ends purportedly being sought. The educational process is inevitably bound and prescribed by limitations in time. The imaginative teacher is able to get the equivalent of 100 minutes of teaching-learning time out of 150 minutes of clock time. Schools are caught up in a straight jacket with respect to their present use of time. Most proposals for improving organization of time speak of more. The day or the week or the year at school is to be lengthened. Such proposals may have merit--but not until we are using present time allocations as productively as possible.

One of Goodlad's conclusions and recommendations was that time utilization studies are needed to reveal what actually transpires in the classroom.

According to Berliner (1976), prior to 1976, very little data were available describing the nature of the instructional activities and episodes a student engaged in each day. He pointed out that accurate records of how time has been allocated to various instructional activities and episodes were needed. In a recent Phi Delta Kappan article, Benjamin Bloom (1980, p. 382) cited that current educational research is moving away from teacher and student characteristic studies to direct observation of learning. One of Bloom's premises was that how teachers utilize and allocate classroom time with students will affect the learning that occurs in teachers and student interactions.

Teaching in the classroom requires the teachers to learn to translate subject matter into classroom activities and think about method in terms of

time and sequence. Teachers must then be able to carry out activities in the classroom, to monitor classroom processes and adjust the timing of events (Doyle, 1979). An awareness and usage of effective instructional behaviors can alleviate many classroom problems of lost time and energy by enabling students to accomplish learning tasks that maximize the use of time in the learning environment.

DELIMITATIONS OF THE STUDY

The delimitations of the study were: (1) The population studied represented one school district and (2) The participants of teachers and schools were not a random sample.

METHODOLOGY

The study was conducted in Chattanooga, Tennessee public schools over a period of four months. Principals from three junior high and three senior high schools volunteered to participate in the study. These schools included four urban, one suburban, and one rural. The school settings varied. Five of the schools consisted of grades 7-9 and 10-12; the other school was comprised of grades 7-12. The enrollments ranged from 300 to 1204 students. All of the schools had self-contained classes. The curriculum programs varied. They included vocational, academic arts and sciences, college preparatory, career education, and high school preparatory programs. Schools were located

in downtown business areas, near industrial plants, and in residential communities. The socioeconomic status (SES) varied. Two of the schools had high SES students; three had low SES, and one had both high and low SES students. (See Table I for demographic data of the schools included in the study.)

The principals selected their most effective teachers for the study. Their selections were based on observed teaching behaviors and teacher characteristics. The principals basically used the criteria that are used to evaluate teachers in the school district.

Fifteen teachers were selected by the principals as being their most effective secondary English teachers. (See Table II for criteria principals used to select the English teachers.)

The fifteen teachers who agreed to participate consisted of seven junior high and eight high school faculty members. Their ages ranged from 30-50, and their teaching experiences ranged from 5-25 years. (See Table III for demographic data of the English teachers who were observed.)

Data were collected by observing secondary English teachers' classes. Sixty classes were observed. The number of classes that were observed for each participant varied. The maximum number of times a teacher was observed was nine times over a period of four months.

Descriptive time narrative logs were designed to record the teaching behaviors in the classroom. This instrument was developed for the following reasons: (1) to decrease the chances for inferred behaviors; (2) to record behaviors chronologically; (3) to be able to record the time of the behaviors; (4) to be able to record verbal and physical behaviors, and (5) to be able to

use flexibility in recording events that may intervene to cause verbal or physical behavior.

The teacher's name, sex, years of teaching experience, date, subject, grade level, class period, and number of students present in the class were recorded at the top of the first log page. Information was recorded from the beginning of the class period to the ending. The length of the logs depended on instructional plans and available classroom time. There were observational days when classes were five or ten minutes shorter because of activity schedules.

The logs also included behaviors during homeroom periods because homeroom period was also the first period in some schools. There were classes in which the homeroom time overlapped with the first period class time. Approximately 500 pages were used to collect the classroom descriptive data.

The classroom narrative data were categorized and quantified. Four raters were brought together for three weeks to read the narrative data. Afterwards, the instructional behaviors in the data were discussed among the raters. Seventy-six types of behaviors were identified and described as the instructional variables.

The seventy-six types of behaviors were then clustered according to when they occurred: at the beginning of class, during lesson presentations, and near the ending of class.

Two more weeks were spent to analyze the data. A sample of the data was analyzed to determine the extent of differences. For the first forty minutes of the classroom time, there was a difference of 1.7%. Most of the differences occurred at the end of the classroom time. There was a 4.3% difference.

The instructional behaviors were then analyzed on the basis of those behaviors that were used most often by the teachers and how frequently the behaviors were used. The classroom time that was recorded with the teaching behaviors and classroom events was used to analyze how time was spent on tasks and activities.

Table I. Demographic Data of the Schools Included in the Study

TYPE	GRADE LEVELS	MINIMUM ENROLLMENT	CURRICULUM PROGRAM
Urban	7-9 10-12	300 300	Basic Skills; High School Preparation; Vocational; Academics; College Preparatory; Career
Suburban	7-9	1,200	Academic; High School Preparation
Rural	7-12	300	High School and College Preparatory

Table II. Criteria Principals Used to Select the English Teachers

Teaching Behaviors and Teacher Characteristics Observed by Principals
1. Teaching behaviors indicate that classroom instruction has been planned and organized
2. Teaching behaviors indicate that knowledge of the subject matter and content is mastered
3. Informs students about what they should learn from lessons
4. Makes clear presentations of instructional information to students
5. Works productively to achieve instructional goals and objectives
6. Uses a variety of teaching methods, materials, and activities to help students achieve instructional goals and objectives
7. Allocates classroom time to teaching activities and maintains an academic focus
8. Directs and guides students in completing academic tasks
9. Keeps students engaged in academic activities
10. Encourages and motivates students to participate in class activities
11. Maintains a classroom learning environment for productive academic activities
12. Interacts with students in class activities
13. Obtains cooperation from students to accomplish goals and objectives
14. Uses flexibility with students
15. Takes an interest in student needs and interests
16. Understands student feelings and attitudes
17. Has a good rapport with students
18. Shows enthusiasm in learning activities with students
19. Participates in community and professional activities
20. Takes an interest in school activities

Table III. Demographic Data of the English Teachers Who Were Observed

GRADES TAUGHT	AGE	SEX	TEACHING EXPERIENCE
7-9	30-50	Female	5-25 Years
10-12	30-50	Male and Female	5-25 Years

DISCUSSION OF FINDINGS

How Do Teachers and Students Spend Allocated Time Together?

Allocated classroom time varied among teachers' classes. The total number of class minutes in which all teachers had was 4,065. As much as 95% of the classroom time was spent on academic instructional tasks and activities. (See Table IV for the total number of class minutes used by the English classroom teachers.) These various instructional tasks and activities consisted of the following:

1. lectures/discussions
2. filmstrips/records
3. recitation/drills
4. reviews/tests
5. role playing
6. seatwork assignments
7. project and homework assignments

Table V illustrates how the teachers allotted time to various tasks and activities. As presented, the teachers used most of the time to present the lesson, discuss, question, and give feedback to student responses (variables 16-54). Most of the time was also used to engage students in practice opportunities to accomplish instructional objectives (variables 55-65). Most of the teachers used some of this time to monitor student progress and activities (variables 66-70). The table also shows that 384 minutes were used to prepare students for class and instruction. This included time being spent on checking the roll, writing on the board, getting student attention, making announcements, assessing readiness levels, and reviewing and giving an outline of instructional

objectives. The teachers spent 240 minutes preparing students to complete tasks and activities, making references to future tasks and activities, and announcing homework assignments.

As presented in Table IV, classroom time was also used to discipline students and/or redirect them to the lesson. The least amount of time that a teacher used for misbehaviors was three minutes, and the most amount of time used for misbehaviors was sixty-two minutes. There were also interruptions that intervened within the allocated classroom time. A total of eighty-seven minutes was used for such interruptions as school announcements, administrators' visits, and other teacher and student visits.

Table IV. Total Number of Class Minutes Used by English Classroom Teachers

TOTAL ALLOCATED CLASS MINUTES	NUMBER OF MINUTES USED FOR INSTRUCTIONAL TASKS AND ACTIVITIES	%	NUMBER OF MINUTES USED FOR INTERRUPTIONS	%	NUMBER OF MINUTES USED TO DISCIPLINE	%
4065	3851	94	87	2	170	4

Table V. How Teachers Allotted Classroom Time to Instructional Tasks and Activities

VARIABLE NUMBERS OF TASKS AND ACTIVITIES	VARIABLE DESCRIPTION	TIME ON TASKS AND ACTIVITIES	PERCENTAGE
01 - 02	Preparation of information and materials	64	2
03 - 15	Beginning of class events and lesson presentations	384	9
16 - 54	Lesson presentations/discussions/ questions/feedback	1288	30
55 - 65	Engaging students in practice opportunities	1362	32
66 - 70	Monitoring student tasks and activities	908	21
71 - 76	Completing tasks and activities	240	6

What Instructional Processes Are Used Most Often and How Much Time Do the Instructional Processes Require?

Instructional behaviors varied among individual teachers. Table VI presents a summary of these instructional behaviors used by the teachers. The behaviors most often exemplified by the teachers are presented in Table VII. These behaviors were used 64% more frequently than other behaviors presented in the same table.

Table VII also shows that the teachers tended to present lesson content to the whole class. Student attention was obtained, and all students were prepared for lecture/discussion/test/review. Student readiness levels were assessed, and the teachers reviewed and gave an overview of the content to be presented. In presenting the lesson to students, the teachers presented the information clearly. Written or verbal examples and illustrations were used to explain the lesson content to students. The teachers also assessed student levels of understanding the lesson, and main points in the lesson were repeated and emphasized.

The teachers also made students aware of transitions in the lecture presentation. As the teachers moved from lecture to questions or discussions, they signaled students for the change. In asking questions, the teachers used questions that were on the levels of their students. They also tended to address the questions to everyone, and then they called on specific students to respond. They waited for students to respond and repeated the student responses. When student responses were incorrect, teachers tended to give students the correct answers.

Table VI. A Summary Frequency of Instructional Behaviors Used by the Teachers

INSTRUCTIONAL VARIABLE	INSTRUCTIONAL BEHAVIOR	FREQUENCY
01	Has information written on board for students	63
02	Has material/media resources ready to be used	12
03	Calls roll aloud	35
04	Calls roll silently	19
05	Organizes students	47
06	Writes on board	13
07	Gets student attention at the beginning of the class	16
08	Makes announcements/reminds students	61
09	Introduces rules and procedures	2
10	Gives students directions	270
11	Gets student attention for lesson presentations	75
12	Prepares all students for lecture/discussion/test review	96
13	Assesses student readiness levels	178
14	Reviews/gives overview of content	103
15	States, outlines, demonstrates objectives of lesson clearly	127
16	Presents information to whole class	171
17	Presents information clearly	133
18	Uses written or verbal examples and illustrations to explain	460
19	Presents lesson contents on level of students	72
20	Relates information to student interests, needs, and characteristics	63
21	Uses specific method to achieve goals and objectives	50
22	Alters method/uses flexibility	17
23	Paces instruction on level of students	47
24	Repeats/emphasizes main points as they occur in lesson	190
25	Signals transitions in lesson	183
26	Does not divert from focus of lesson	47
27	Redirects students to lesson	32
28	Summarizes/emphasizes main ideas upon completing instructional segment	54

Table VI--continued. A Summary Frequency of Instructional Behaviors Used by the Teachers

INSTRUCTIONAL VARIABLE	INSTRUCTIONAL BEHAVIOR	FREQUENCY
29	Assesses student level of understanding	140
30	Directs students into discussion	10
31	Facilitates discussion	8
32	Motivates/encourages participation	10
33	Recognizes participation/ideas	9
34	Listens to students/responds	7
35	Encourages other students to listen to students	7
36	Alerts students for questions	76
37	Uses types of questions for student level	114
38	Addresses questions to everyone	279
39	Asks questions and then calls on students	51
40	Asks questions and calls on specific students to respond	126
41	Calls on specific students and then asks questions	81
42	Uses a variety of ways to call on students	10
43	Waits for students to respond	210
44	Calls on students in some consistent order	18
45	Alerts students for order of questions	40
46	Repeats responses	272
47	Praises students	82
48	Gives answers	99
49	Calls on another student to give answers	44
50	Repeats question	27
51	Rephrases question	44
52	Gives clues to answers	56
53	Asks new questions	61
54	Gives no feedback	9
55	Introduces desired tasks and activities	111
56	Establishes procedures for tasks and activities	117
57	Provides material resources	24
58	Indicates start of task and activity	51
59	Checks to see if everyone understands	45
60	Uses recitation	52

Table VI--continued. A Summary Frequency of Instructional Behaviors Used by the Teachers

INSTRUCTIONAL VARIABLE	INSTRUCTIONAL BEHAVIOR	FREQUENCY
61	Uses drills	46
62	Uses seatwork assignments	165
63	Uses small groups	4
64	Uses individual approach	9
65	Accomplishes tasks and activity goals and objectives	75
66	Moves around the room/observing students	64
67	Moves around the room/giving feedback	49
68	Sits down/observing students	16
69	Stands observing students	22
70	Assesses what students have done during time	75
71	Gives advanced notice to complete tasks and activities	106
72	Directs students to put materials away	12
73	Gives clear directions	33
74	Summarizes at the end of tasks and activities	9
75	Makes references to future tasks and activities	85
76	Uses this time time to include assignments	44

Table VII. The Most Frequent Instructional Behaviors Used

INSTRUCTIONAL VARIABLE	INSTRUCTIONAL DESCRIPTION	FREQUENCY
18	Uses written or verbal examples and illustrations to explain	460
38	Addresses questions to everyone	279
46	Repeats responses	272
11	Gets student attention	270
43	Waits for students to respond	210
24	Repeats/emphasizes main points as they occur in lesson	190
25	Signals transitions in lesson	183
13	Assesses student readiness levels	178
16	Presents information to whole class	171
62	Uses seatwork assignments	165
29	Assesses student level of understanding	140
17	Presents information clearly	133
15	States, outlines, demonstrates objectives of lesson clearly	127
40	Asks questions and calls on specific students to respond	126
56	Establishes procedures for tasks and activities before students ask and before problems occur	117
37	Uses types of questions for student level	114

Table VII--continued. The Most Frequent Instructional Behaviors Used

INSTRUCTIONAL VARIABLE	INSTRUCTIONAL DESCRIPTION	FREQUENCY
55	Introduces desired tasks	111
71	Gives advance notice to finish tasks and activities	106
14	Reviews/gives overview of content	103
48	Gives answers	99
12	Prepares all students for lecture/ discussion/test/review	96
75	Makes references to future tasks and activities	85

The teachers provided practice opportunities for students to attain instructional objectives. Seatwork assignments were often used to accomplish the objectives which introduced the desired tasks and activities. Procedures for the tasks and activities were also established. Afterwards, the teachers gave advanced notice for students to complete tasks and activities. They also made references to future tasks and activities in which students would engage.

Which Instructional Processes Enable Teachers and Students to Attain Educational Objectives Within the Available Classroom Time?

The teachers and students attained several instructional objectives within the allocated classroom time. An examination of the data showed that there were specific instructional behaviors used. These behaviors reflected that instruction had been prepared and organized for the students.

Information that students needed was already written on the board as students entered class. At the beginning of class, most of the teachers checked the roll aloud. They also tended to make announcements and give reminders to students.

As the teachers prepared students for lesson presentations, they assessed student readiness levels before reviewing or giving an overview of the lesson. Lesson objectives were also given to students clearly before lessons were presented.

Specific behaviors were also used by the teachers in presenting the lesson. Most of these behaviors were cited in the List of Behaviors That Occurred Most Frequently With the Teachers (cited previously on page 18).

Along with these behaviors, the teachers related the lesson to student interests, needs, and ability levels, but they did not divert from the lesson. Specific methods were used to achieve the instructional goals and objectives. The teachers also altered their methods to pace the instruction on the levels of the students. Very few teachers engaged in class discussions. For those teachers who did, however, there was a trend to direct students into discussions. Teachers also motivated and encouraged student participation.

Other instructional behaviors that seemed to enable the teachers and students to attain educational objectives within the allocated classroom time were reflected in how questions were addressed to students (cited previously on page 16). The type of feedback to responses varied, but the teachers frequently repeated student responses, praised students for responses, and gave students answers.

All of the teachers provided some type of practice opportunities to help students attain objectives. Most of the teachers who monitored student activities and progress moved around the room observing students and assessing what students had done. Tasks and activities were ended by teachers giving students advanced notice to finish, making references to future tasks and activities, and announcing homework assignments.

CONCLUSIONS

The following conclusions have been drawn from the study:

1. Teachers who are task oriented can achieve instructional goals and objectives within the allocated classroom time.
2. Teachers who plan and organize instruction can allot more time to academic tasks and activities.
3. Principals can identify effective instructional behaviors that enable teachers to perform learning tasks and activities.
4. Previous research on the topic has been supported by the findings of this research project.

FUTURE DIRECTIONS

The study has added more descriptive knowledge about what teachers do in the classroom to accomplish many instructional tasks and activities. The study gives implications for further research. With the instructional behaviors that have been identified, the study should be replicated to include a larger sample of teachers to make comparisons. There are implications in the study that suggest various management skills facilitate the utilization of available classroom time. Further research should also investigate the management skills used with the instructional behaviors. Finally, added research is needed to determine if there is a significant difference between the amount of time spent on instructional activities and age, sex, and teaching experiences of teachers.

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